Spinal anesthesia versus general anesthesia for lumbar disc surgery

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Background: Lumbar spine surgery can be performed using different anesthetic techniques such as general endotracheal anesthesia (GA) or spinal-based regional anesthesia (SA).¹ Several studies have been performed comparing these two anesthetic techniques and have revealed disparate results. SA is a safe but rarely used alternative to general anesthesia for lumbar disc surgery. It reduces blood loss, avoid pressure necrosis and nerve injuries, and it provides a more comfortable postoperative period.² Regional anesthetics may also lower the incidence of pulmonary complications when compared to general anesthetics. some additional advantages of spinal anesthesia include early discharge from the post-anesthesia care unit, little pain and less nausea and vomiting.³ The aim of this study was to compare the safety and efficacy of the intraoperative parameters and postoperative outcomes associated with SA and GA in patients undergoing lumbar disc surgery.

Material and Methods: Following Institutional Review Board approval, 760 patients were evaluated who underwent lumbar disc surgery between January 2013 and December 2015. Demographic, clinical, laboratory and peroperative information was determined from the patients’ medical records.

Table 1. Patient characteristics

	Group SA	Group GA
Age (yr)	44,28±11.76	43,36±11,08
Gender (M/F)	276/94	242/148
Nausea	17 (4,59%)	32 (8,20%)
Headache	6 (1,62%)	40 (10,2%)

Results and Discussion: There was no significant difference between the procedure characteristics between two groups. Nausea was less common in SA group (p < 0.005, Pearson Chi-Square test). In addition, headache was significantly less in SA group (p < 0.001, Pearson Chi-Square test). Spinal anesthesia (n=370) was associated with shorter length of stay (p < 0.001, Pearson Chi-Square test) comparing with general anesthesia (n=390). None of the GA group could be discharged on the second day after surgery. Whereas, all of the patient in SA group could be discharged latest on the third day.

Table 2. Procedure characteristics

	Group SA	Group GA
L3-L4	13 (3,51%)	16 (4,1%)
L4-L5	185 (50%)	203 (52%)
L5-S1	135 (36,4%)	151 (38,7%)
Multilevel	37 (10%)	20 (5,1%)

Table 3. Day of discharge

	Group SA	Group GA
Day 2	342	0
Day 3	28	301
Day 4	0	81
Day 5	0	8

Conclusion: Spinal anesthesia can be performed safely in patients undergoing lumbar spine surgery. It has the potential to reduce hospital stay, nausea and vomiting, and headache. Further prospective evaluation will help to validate these findings.

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3. McLain RF, Bell GR, Kalfas I, Tetzlaff JE, Yoon HJ. Complications associated with lumbar laminectomy: a comparison of spinal versus general anesthesia. Spine 2004;29:2542-7.